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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,205	06/14/2000	Jonathan Huie	SIA-P008	8285

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FERNANDEZ & ASSOCIATES LLP  
1047 EL CAMINO REAL  
SUITE 201  
MENLO PARK, CA 94025

EXAMINER
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DELGADO, MICHAEL A

ART UNIT	PAPER NUMBER
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2144

DATE MAILED: 03/31/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application

09/594,205

Applicant(s)

HUIE ET AL.

Examiner

Michael S. A. Delgado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 5 and 8 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,460,120 by Bass et al.

In claim 1, Bass teaches about a high performance network address processor comprising (Fig 1):

a longest prefix match lookup engine for receiving a network address request having a designated network destination address (Col 7, line 60-Col 8, line 15); and

an associated data engine "Data Store Coprocessor" coupled to the longest prefix match lookup engine "Tree Search Engine Coprocessor" for receiving an output address "forwarding information" from the longest prefix match lookup engine and providing a network address

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processor “protocol processor” data output corresponding to the designated network destination address (Col 7, line 60-Col 8, line 15), (Col 8, line 65-Col 9, line 10).

In claim 2, Bass teaches about a high performance network address processor of claim 1 wherein the longest prefix match lookup engine comprises a plurality of pipelined lookup tables (Col 20, line 65-Col 21, line 5).

In claim 3, Bass teaches about a high performance network address processor of claim 1 wherein the network address processor is configurable to a variety of destination address width (Col 7, line 60-Col 8, line 15).

In claim 4, Bass teaches about a high performance network address processor of claim 1 wherein the network address processor generates a network address data output in one clock cycle (Col 30, lines 45-65).

In claim 5, Bass teaches about a high performance network address processor integrated circuit, wherein the network address processor integrated circuit comprises (Fig 1):

a longest prefix match lookup engine “Tree Search Engine Coprocessor” for receiving a network address request having a designated network destination address (Col 7, line 60-Col 8, line 15); and

an associated data engine “Data Store Coprocessor” coupled to the longest prefix match lookup engine “Tree Search Engine Coprocessor” for receiving an output address “forwarding information” from longest prefix match lookup engine and providing a network address processor “protocol processor” data output corresponding to the designated network destination address (Col 7, line 60-Col 8, line 15), (Col 8, line 65-Col 9, line 10).

In claim 6, Bass teaches about a high performance network address processor of claim 5 wherein the longest prefix match lookup engine comprises a plurality of pipelined lookup tables (Col 20, line 65-Col 21, line 5).

In claim 7, Bass teaches about a high performance network address processor of claim 2 wherein the plurality of pipelined lookup tables is implemented in a DRAM (Col 7, line 60-Col 8, line 15), (Col 9, lines 45-55).

In claim 8, Bass teaches about a high performance network addressing method comprising the steps of (Fig 1):

providing a longest prefix match lookup engine “Tree Search Engine Coprocessor” with a network address data request and a destination network address, wherein the longest prefix match lookup engine comprises a set of lookup tables (Col 7, line 60-Col 8, line 15), (Col 20, line 65-Col 21, line 5);

searching the set of lookup tables to select a look up engine address output from the set of lookup tables to provide to an associated data engine “protocol processor” (Col 7, line 60-Col 8, line 15); and

searching the associated data engine “Data Store Coprocessor” to provide an associated destination address data output (Col 7, line 60-Col 8, line 25).

In claim 9, Bass teaches about a high performance network addressing method of claim 8 wherein the step of searching the set of lookup tables comprises searching for an entry of the set of lookup tables that comprises the smallest entry that is greater than or equal to an input search

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key, the step of searching for the smallest entry comprising the steps of (Col 7, line 60-Col 8, line 15):

selecting the smallest entry that equals the input search key with a corresponding number of mask bits, wherein if one or more entries comprise the same key, the key having the smallest mask is selected (Col 25, line 45-Col 26, line 5); and

wherein if no key matches the above requirements, the maximum key in a row is compared with the input search key using each of a set of mask pointer pairs, each of the pointer is selected to correspond to the smallest mask for which the input search key equals the maximum key in the row with the corresponding number of mask bits ignored (Col 25, line 45-Col 26, line 5).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent No. 6,539,369 by Brown, teaches about a method and apparatus for storing sparse and dense subtrees in a longest prefix match lookup table.

US patent No. 6,460,112 by Srinivasan et al, teaches about a method and apparatus for determining a longest prefix match in a content addressable memory device.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. A. Delgado whose telephone number is 703-305-8057. The examiner can normally be reached on 8 AM - 4.30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703)308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
MD

  
**DAVID WILEY**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**